



Atty. Dkt. No. 023971-0422

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Masatsugu YOKOTE
Title: STEERING CONTROL FOR DRIVE WHEELS OF VEHICLE
Appl. No.: 10/849,181
Filing Date: May 20, 2004
Examiner: Lee Sin Yee LUM VANNUCCI
Art Unit: 3611
Confirmation No: 7250

**SUPPLEMENTAL
INFORMATION DISCLOSURE STATEMENT UNDER 37 C.F.R. § 1.56**

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Submitted herewith on Form PTO/SB/08 is a listing of documents known to Applicants in order to comply with Applicants' duty of disclosure pursuant to 37 C.F.R. § 1.56.

A copy of each non-U.S. patent document and each non-patent document is being submitted to comply with the provisions of 37 C.F.R. § 1.97 and § 1.98.

The submission of any document herewith, which is not a statutory bar, is not intended as an admission that such document constitutes prior art against the claims of the present application or that such document is considered material to patentability as defined in 37 C.F.R. § 1.56(b). Applicants do not waive any rights to take any action which would be appropriate to antedate or otherwise remove as a competent reference any document which is determined to be a *prima facie* art reference against the claims of the present application.

TIMING OF THE DISCLOSURE

The listed documents are being submitted in compliance with 37 C.F.R. § 1.97(c), before the mailing date of either a final action under 37 C.F.R. § 1.113, a notice of allowance under 37 C.F.R. § 1.311, or an action that otherwise closes prosecution in the application.

RELEVANCE OF EACH DOCUMENT

Any document listed on the attached PTO/SB/08 was cited as being relevant during the prosecution of the corresponding Germany application. A copy of the German Office Action is attached setting forth the portion of each document considered relevant by the examiner. An English-language counterpart of the foreign-language documents has been provided.

Applicants respectfully request that each listed document be considered by the Examiner and be made of record in the present application and that an initialed copy of Form PTO/SB/08 be returned in accordance with MPEP § 609.

STATEMENT

The undersigned hereby states in accordance with 37 C.F.R. § 1.97(e)(1) that each item of information contained in this supplemental information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three (3) months prior to filing of this Statement.

Although Applicant believes that no fee is required for this Request, the Commissioner is hereby authorized to charge any additional fees which may be required for this Request to Deposit Account No. 19-0741.

Respectfully submitted,

Date: February 22, 2007

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Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449/PTO

INFORMATION DISCLOSURE
STATEMENT BY APPLICANT

Date Submitted: February 22, 2007

(use as many sheets as necessary)

Sheet

1 of 1

Complete if Known

Application Number	10/849,181
Filing Date	5/20/2004
First Named Inventor	Masatsugu Yokote
Art Unit	3618
Examiner Name	Lee Sin Yee LUM VANNUCCI
Attorney Docket Number	023971-0422

U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number-Kind Code ² (if known)			
	A1	20060015226	01-19-2006	Bernzen et al.	
	A2	6856871	02-15-2005	Mould et al.	
	A3	6405113	06-11-2002	Yamawaki et al.	

UNPUBLISHED U.S. PATENT APPLICATION DOCUMENTS

Examiner Initials*	Cite No. ¹	U.S. Patent Application Document	Filing Date of Cited Document MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Serial Number-Kind Code ² (if known)			

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Documents	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ⁶
		Country Code ³ -Number ⁴ -Kind Code ⁵ (if known)				
	B4	EP 1331158A1	07-30-2003	Mould et al.		
	B5	DE 10235039A1	02-12-2004	Berzen et al.		
	B6	DE 10059689A1	06-21-2001	Yamawaki et al.		
	B7	JP 09323561A	12-16-1997	Yoshioka et al.		
	B8	JP 59-141405	09-21-1984	Arai et al.		

NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.) date, page(s), volume-issue number(s), publisher, city and/or country where published.				T ⁶

Examiner Signature

Date Considered

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. 1 Applicant's unique citation designation number (optional). 2 See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. 3 Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). 4 For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. 5 Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. 6 Applicant is to place a check mark here if English language Translation is attached. This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

- 1) EP 1 331 158 A1
- 2) DE 102 35 039 A1
- 3) DE 100 59 689 A1
- 4) JP 09-323561 AA
- 5) JP 59-141405 U

I
Die Prüfung der Anmeldung erfolgt aufgrund des am Anmeldetag gestellten Antrages.
Ihr liegen neben den ursprünglichen Unterlagen die am 30.Juni 2004 eingereichten
Reinzeichnungen zugrunde.

II

In den Ansprüchen 2 bis 5 ist unklar, was darunter zu verstehen ist, dass Antriebsräder
innerhalb bzw. außerhalb eines Abbiegeradius sind.

Alleine schon aufgrund dieser Unklarheiten sind die Ansprüche 2 bis 5 nicht gewährbar.

Des Weiteren ist unklar, warum sich die Gierreaktion erhöht, wenn die Antriebskraft für
das äußere Rad verringert wird (siehe Beschreibung Seite 19 zweiter Absatz).

Die Anmelderin wird zudem gebeten, der Prüfungsstelle die zum Stand der Technik
genannte Druckschrift „March, Manual for New-Model Car, Introduction of K12-Series“
veröffentlicht im Februar 2002 von der Nissan Motor Co., Ltd., zukommen zu lassen.

III

Die nachveröffentlichte Entgegenhaltung 1, die EP 1 331 158 A1 offenbart eine
„Lenkeinrichtung zum Steuern linker und rechter Antriebsräder eines Fahrzeugs
(vgl. Ansprüche 1 und 4), wobei vorgesehen sind:

- ein Antriebskraftsteuerabschnitt zum Steuern einer linken und einer rechten Antriebskraft für das linke bzw. rechte Antriebsrad individuell entsprechend einem Fahrzustand des Fahrzeugs (vgl. Ansprüche 1 und 4; [0002], [0016], [0017]);
- eine Servovorrichtung zum Hinzufügen einer Lenkservokraft zur Lenkeingabekraft eines Fahrers, die einer Lenkeingabevorrichtung zugeführt wird (vgl. Ansprüche 1 und 4);
- ein Lenkmechanismus zum Verbinden des linken und rechten Antriebsrades mit der Lenkeingabevorrichtung, so dass das linke und das rechte Antriebsrad entsprechend der Lenkeingabekraft des Fahrers und der dieser hinzugefügten Lenkservokraft gedreht werden (vgl. Fig. 1; [0014]);
- ein Lenkreaktionskraftberechnungsabschnitt zur Berechnung einer Lenkreaktionskraft, die auf die Lenkeingabevorrichtung einwirkt, entsprechend einer Differenz zwischen der linken und der rechten Antriebskraft (vgl. Anspruch 1; [0017]); und
- ein Lenkkraftkorrekturabschnitt zum Korrigieren der Lenkservokraft, um die Lenkreaktionskraft zu kompensieren (vgl. Anspruch 1; [0017]).“

Damit ist ein Gegenstand nach Anspruch 1 neuheitsschädlich aus der Entgegenhaltung 1 bekannt und somit der Anspruch 1 nicht gewährbar.

Die ebenfalls nachveröffentlichte Entgegenhaltung 2, die DE 102 35 039 A1 zeigt ebenso die Merkmale einer Lenkeinrichtung nach Anspruch 1 (vgl. Ansprüche 1 – 4 und 8; [0003] und [0012]).

Lediglich in Ergänzung wird noch auf die Entgegenhaltung 3, die DE 100 59 689 A1 (vgl. Ansprüche 1 – 3; Spalte 1 Zeile 13 – 16 und 53 – 58; Spalte 4 Zeile 34 – 43) sowie auf die von der Anmelderin zum Stand der Technik genannten Entgegenhaltungen 4, die JP 09-323561 AA und 5, die JP 59-141405 U verwiesen, welche auch eine Vielzahl der Merkmale eines Gegenstandes nach Anspruch 1 zeigen.

IV

Die Ansprüche 2 – 7 sind schon infolge ihrer Abhängigkeit von dem übergeordneten Anspruch 1 nach dessen Wegfall ebenfalls nicht gewährbar.

Die Merkmale der Ansprüche 2 – 7 gehören, sofern sie nicht ohnehin aus einer der genannten Entgegenhaltungen hervorgehen, zum Können und Wissen des Fachmanns bzw. betreffen eine rein bauliche Ausgestaltung der Lenkeinrichtung nach Anspruch 1 ohne eigenständige patentbegründende Bedeutung.

V

Bezüglich des nebengeordneten Verfahrensanspruchs 8 wird auf die Entgegenhaltung 1 verwiesen. Diese Druckschrift offenbart ein

„Lenkverfahren zum Steuern linker und rechter, lenkbarer Antriebsräder eines Fahrzeugs (vgl. Ansprüche 1 und 4), wobei vorgesehen sind:

- Untersuchung einer Differenz zwischen linken und rechten Antriebskräften, die individuell für die linken und rechten Antriebsräder gesteuert werden, die entsprechend der Lenkeingabekraft eines Fahrers gedreht werden, die einer Lenkeingabevorrichtung zugeführt wird, und entsprechend einer Lenkservokraft, die der Lenkeingabekraft des Fahrers hinzugefügt wird (vgl. Ansprüche 1 und 4; [0002], [0014], [0016] und [0017]; Fig. 1); und
- Ändern der Lenkservokraft so, dass eine Lenkreaktionskraft kompensiert wird, die auf die Lenkeingabevorrichtung einwirkt, entsprechend der Differenz zwischen der linken und der rechten Antriebskraft (vgl. Anspruch 1; [0017]).“

Damit ist ein Verfahren nach Anspruch 8 neuheitsschädlich aus der Entgegenhaltung 1 bekannt und somit der Anspruch 8 nicht gewährbar.

VI

Bei dieser Sachlage kann eine Patenterteilung nicht in Aussicht gestellt werden.

Falls eine Erwiderung dieses Bescheides nicht beabsichtigt ist, wird eine formlose Nachricht über seinen Erhalt erbeten.

Prüfungsstelle für Klasse B 62 D

Dr. rer. nat. Baier

Hausruf 2899

Anlage: Ablichtungen von 5 Entgegenhaltungen

**TRANSLATION OF GERMAN
OFFICE ACTION OF 11/23/2006**

P 36 446 - ba

December 13, 2006

TRANSLATION INTO ENGLISH OF:

OFFICE ACTION

Of : November 23, 2006
Applicant : Nissan Motor Co., Ltd.
Application No. : 10 2004 025 777.9-21
Response due by : April 1, 2007

The numbers of the following references are cited in this Office Action for the first time and will be used consecutively throughout the examination proceedings:

- 1) EP 1 331 158 A1
- 2) DE 102 35 039 A1
- 3) DE 100 59 689 A1
- 4) JP 09-323561 AA
- 5) JP 59-141405 U

I

Examination of the present application is executed on the basis of the request submitted on the date of filing. The examination is based on the original documents and, in addition, on the fair drawings filed on June 30, 2004.

II

In claims 2 to 5 it is unclear what the applicant wants to express by the formulation that drive wheels are inside or outside of a turning radius.

These ambiguities are in themselves sufficient to render claims 2 to 5 not allowable.

In addition, it is unclear why the yawing response increases when the driving force for the outer wheel is made smaller (cf. the description page 19, second paragraph).

In addition, the applicant is requested to provide the Examiner with the publication "March, Manual for New-Model Car, Introduction of K12-Series", which was published by Nissan Motor Co., Ltd. in February 2002, and which has been cited as a prior art reference.

III

The post-published reference 1, viz. EP 1 331 158 A1, discloses a steering apparatus for controlling left and right drive wheels of a vehicle (cf. claims 1 and 4), comprising:

- a driving force control section to control left and right driving forces of the left and right drive wheels individually in accordance with a running condition of the vehicle (cf. claims 1 and 4; [0002], [0016], [0017]);
- a power assistance device to add a steering assistance force to a driver's steering input force input to a steering input device (cf. claims 1 and 4);
- a steering mechanism to link the left and right drive wheels with the steering input device so that the left and right drive wheels are turned in accordance with the driver's steering input force and the steering assistance force added thereto (cf. Fig. 1; [0014]);
- a steering reaction force calculating section to calculate a steering reaction force acting on the steering input device in accordance with a difference between the left and right driving forces (cf. claim 1; [0017]); and
- a steering force correction section to correct the steering assistance force so as to compensate the steering reaction force (cf. claim 1; [0017])."

It follows that a subject matter according to claim 1 is known from reference 1 in a novelty-destroying manner, and claim 1 is consequently not allowable.

Reference 2, viz. DE 102 35 0 39 A1, which is post-published as well, also discloses the features of a steering apparatus according to claim 1 (cf. claims 1 – 4 and 8; [0003] and [0012]).

Only in order to supplement the above, the applicant's attention is additionally drawn to reference 3, viz. DE 100 59 689 A1 (cf. claims 1 – 3 ; column 1, lines 13 - 16 and 53 – 58; column 4, lines 34 – 43) as well as to references 4, viz. JP 09-323561 AA, and 5, viz. JP 59-

141405 U, which have been cited by the applicant as prior art references and which also show a large number of the features of the subject matter according to claim 1.

IV

After the rejection of the superior claim 1, claims 2 – 7 cannot be allowed either, not least in view of the fact that they depend on said superior claim 1:

As far as the features according to claims 2 - 7 are not disclosed by one of the above-mentioned references anyhow, they are part of the knowledge and of the ability of those skilled in the art or they concern an embodiment which is only a structural embodiment of the steering apparatus according to claim 1 and which does not have any independent importance that could substantiate the grant of a patent.

V

With regard to the parallel method claim 8, the applicant's attention is drawn to reference 1. This reference discloses a

"steering process for controlling left and right steerable drive wheels of a vehicle (cf. claims 1 and 4), comprising:

- examining a difference between left and right driving forces individually controlled for the left and right drive wheels turned in accordance with a driver's steering input force input to a steering input device and a steering assistance force added to the driver's steering input force (cf. claims 1 and 4; [0002], [0014], [0016] and [0017]; Fig. 1); and
- varying the steering assistance force so as to compensate a steering reaction force acting on the steering input device in accordance with the difference between the left and right driving forces (cf. claim 1; [0017])."

It follows that a subject matter according to claim 8 is known from reference 1 in a novelty-destroying manner, and claim 8 is consequently not allowable.

VI

Under these circumstances, grant of a patent cannot be expected.

If the applicant does not intend to submit a reply to the present Office Action, the Examiner would be grateful to receive an informal acknowledgement of the receipt of this Office Action.

Patent Examiner for class B 62 D
Dr. rer. nat. Baier

Encl.

copies of 5 references